PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
United States Patent and Trademark Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 15 March 2000 (15.03.00)	
International application No. PCT/US98/15219	**Applicant's or agent's file reference** LEC-006PC
International filing date (day/month/year) 23 July 1998 (23.07.98)	**Priority date** (day/month/year)
Applicant PRINGLE, Lewis	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

04 February 2000 (04.02.00)

[ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[ ] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO **34, chemin des Colombettes** **1211 Geneva 20, Switzerland**	Authorized officer Claudio Borton
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 :
G06F 17/28, 9/46

A1

(11) International Publication Number: WO 00/05660

(43) International Publication Date: 3 February 2000 (03.02.00)

(21) International Application Number: PCT/US98/15219

(22) International Filing Date: 23 July 1998 (23.07.98)

(71) Applicant *(for all designated States except US)*: LOGOVISTA CORPORATION [JP/JP]; 2–10–24, Shiomi, Koto–ku, Tokyo 135 (JP).

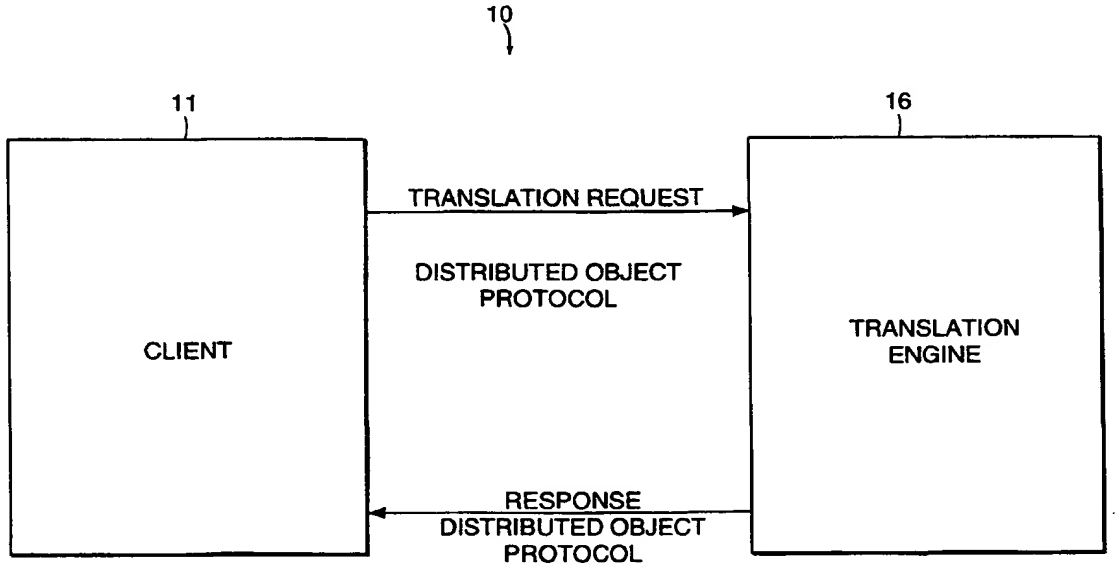
(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: PRINGLE, Lewis [US/US]; 34 Church Street, Sudbury, MA 01776 (US).

(74) Agent: MCLAUGHLIN, Marianne, M.; Testa, Hurwitz & Thibeault, LLP, High Street Tower, 125 High Street, Boston, MA 02110 (US).

(81) Designated States: JP, US.

Published
With international search report.

(54) Title: MODULAR LANGUAGE TRANSLATION SYSTEM



(57) Abstract

A modular language translation system allows a user of any one of a variety of different user interfaces to be able to send translation requests to and receive responses from any one of a variety of different translation engines. A user of the system familiar with the user interface of a first type of translation system, such as one that translates from Japanese to English, can use that user interface to get translations from the translation engine of a second type of translation system, such as a Russian–to–English system, without having to learn the particularities of the second system and its interface. The user interfaces and the translation engines communicate via a distributed object protocol.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	**ES**	Spain	**LS**	Lesotho	**SI**	Slovenia
AM	Armenia	**FI**	Finland	**LT**	Lithuania	**SK**	Slovakia
AT	Austria	**FR**	France	**LU**	Luxembourg	**SN**	Senegal
AU	Australia	**GA**	Gabon	**LV**	Latvia	**SZ**	Swaziland
AZ	Azerbaijan	**GB**	United Kingdom	**MC**	Monaco	**TD**	Chad
BA	Bosnia and Herzegovina	**GE**	Georgia	**MD**	Republic of Moldova	**TG**	Togo
BB	Barbados	**GH**	Ghana	**MG**	Madagascar	**TJ**	Tajikistan
BE	Belgium	**GN**	Guinea	**MK**	The former Yugoslav Republic of Macedonia	**TM**	Turkmenistan
BF	Burkina Faso	**GR**	Greece			**TR**	Turkey
BG	Bulgaria	**HU**	Hungary	**ML**	Mali	**TT**	Trinidad and Tobago
BJ	Benin	**IE**	Ireland	**MN**	Mongolia	**UA**	Ukraine
BR	Brazil	**IL**	Israel	**MR**	Mauritania	**UG**	Uganda
BY	Belarus	**IS**	Iceland	**MW**	Malawi	**US**	United States of America
CA	Canada	**IT**	Italy	**MX**	Mexico	**UZ**	Uzbekistan
CF	Central African Republic	**JP**	Japan	**NE**	Niger	**VN**	Viet Nam
CG	Congo	**KE**	Kenya	**NL**	Netherlands	**YU**	Yugoslavia
CH	Switzerland	**KG**	Kyrgyzstan	**NO**	Norway	**ZW**	Zimbabwe
CI	Côte d'Ivoire	**KP**	Democratic People's Republic of Korea	**NZ**	New Zealand		
CM	Cameroon			**PL**	Poland		
CN	China	**KR**	Republic of Korea	**PT**	Portugal		
CU	Cuba	**KZ**	Kazakstan	**RO**	Romania		
CZ	Czech Republic	**LC**	Saint Lucia	**RU**	Russian Federation		
DE	Germany	**LI**	Liechtenstein	**SD**	Sudan		
DK	Denmark	**LK**	Sri Lanka	**SE**	Sweden		
EE	Estonia	**LR**	Liberia	**SG**	Singapore		

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 98/15219

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 G06F17/28 G06F9/46

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SCHWARZ: "'Moment, ich verbinde...'" C'T, no. 3, March 1997, pages 256-273, XP000697801 DE see the whole document	1,33,41, 53
A	EP 0 762 299 A (HITACHI, LTD.) 12 March 1997 see claim 1	1,33,41, 53

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
21 June 1999	29/06/1999

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Abram, R

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US 98/15219

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 762299 A	12-03-1997	JP 9081569 A	28-03-1997
		CN 1151052 A	04-06-1997
		US 5751957 A	12-05-1998

PATENT COOPERATION TREATY

PCT

REC'D 22 NOV 2000
WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
LEC-006PC		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US98/15219	23/07/1998	23/07/1998
International Patent Classification (IPC) or national classification and IPC G06F17/28		
Applicant LOGOVISTA CORPORATION et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   - VI ☐ Certain documents cited
   - VII ☒ Certain defects in the international application
   - VIII ☒ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
04/02/2000	20.11.2000
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Corcoran, P Telephone No. +49 89 2399 2146

Form PCT/IPEA/409 (cover sheet) (January 1994)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US98/15219

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-20 as originally filed

Claims, No.:

1-62 as originally filed

Drawings, sheets:

1/8-8/8 as originally filed

2. The amendments have resulted in the cancellation of:

☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-62
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-62
Industrial applicability (IA)	Yes:	Claims	1-62
	No:	Claims	

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

V. Reasoned Statement under Article 35 (2) PCT

(1) Cited Prior Art

Reference is made to the following documents:

D1: WO94 06086 (CATERPILLAR INC.) 17 March 1994;

D2: US-A-5175684 (TRANS LINK INT CORP) 29 Dec 1992;

D3: J. Nagata & H. Yamamoto: "PENSÉE: A User-friendly Machine Translation System", OKI Technical Review, Vol. 61, August 1995, pages 17-20;

D4: SCHWARZ: "Moment, ich verbinde..." C'T, no. 3, March 1997, pages 256-273, XP000697801;

D5: J.R. NICOL ET. AL.: "Object Orientation in Heterogeneous Distributed Computing Systems", COMPUTER ISSN 0018-9162 , USA, June 1993, vol. 26, no. 6, pages 57 to 67;

D6: K.-P. ECKERT: "From OSI to OMG. Experiences from the port of an ISODE-based application to OMG/CORBA concepts", COMPUTER COMMUNICATIONS (ELSEVIER) ISSN 0140-3664, UK, January 1996, vol. 19, no. 1, pages 4 to 12;

The documents D1-D3, D5 and D6 were not cited in the International Search Report.

(2) Claims 1-32

2.1) Claim 1 - Novelty

In respect of the subject matter of claim 1, the documents D1, D2 and D3 are considered to represent equally closest prior art. Each of said documents discloses a translation system with a modular architecture comprising, at least implicitly, the following features:

- a client module or process for sending a translation request comprising text to be translated and for receiving a response to the request corresponding to a translation of the text from a first language to a second language;
- a translation engine or "server" for receiving the translation request, generating the response and sending the response to the client;

Particular reference is made to the following passages of said documents:

D1: p.9 l.19-25, p.11 l.8-27, p.59 l.26 - p.62 l.31, Figs. 1a , 1b and 3;

D2: col.3 l.14 - col.4 l.29, col.4 l.49 - col.5 l.64, Fig. 1;

D3: p.17, Section 1 *Introduction* and Figs. 1 and 2;

Each of said documents can be said to disclose a machine translation system based on a modular client-server type architecture. Claim 1 additionally specifies that

communication between the client and the translation engine takes place via a "distributed object protocol". This feature can be regarded as novel over the teaching of the cited documents D1-D3.

2.2) Claim 1 - Inventive Step

Whereas the documents D1-D3 do not contain any explicit specification concerning the details of the communication protocol to be employed between the client, i.e. the process submitting the translation request, and the server, i.e. the translation engine providing the translation service, it is self-evident to the skilled person that an appropriate communication protocol must be selected in accordance with circumstances to ensure effective communication between the client-end and server-end modules of the system.

Distributed object protocols are known *per se.* D4, cited in the International Search Report describes a number of such protocols. D5 and D6 further cited by the examiner likewise describe aspects of the distributed object model and open distributed processing which represent knowledge generally available to the person skilled in the art at the filing date of the present application. In this regard, it is noted that D5 describes object oriented distributed computing as "a natural step forward from the client-server systems of today", (D5: p.58, middle col. l.26-33) and as "an evolution of the client- server approach", (D5: p.59, paragraph bridging middle and right-hand col.). D5 likewise states that "the emphasis on interfaces and modules has brought many experts to agree that modelling a distributed system as a distributed collection of interacting objects is appropriate for integrating distributed information processing resources ..." (D5: p.58 l.19-26) and further notes that use of the distributed object model supports "heterogeneity" and "autonomy" (D5: p.59, left-hand col. l.30-39). D6 lists a number of the benefits of distributed object systems including "extensibility", "encapsulation", "design portability", "design autonomy" and "scalability" (cf. D6: *1. Introduction*, p.4-6; in particular, *1.1 Goals of distributed object systems*).

The selection of the distributed object model for implementing a given application is therefore a matter of normal design procedure merely involving choosing from among a number of known design paradigms in accordance with overall design aims (e.g. providing support for modularity and extensibility). The use of a distributed object

protocol to implement communication between the modules of a system based on the distributed object model would follow as a matter of course (cf. for example, D6: p.5, *1.2 Architecture of distributed object systems*). In the context of a distributed system with client-end and server-end processes potentially running on different platforms (cf. D1: p.15 l.13-16; D3: p.17, *Introduction* and p.18 right hand col. l.1-8) the selection of a distributed object protocol for defining and implementing communications between client-end and server-end processes would thus come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages achieved in terms of transparent interoperability of components and modular extensibility of the system as a whole can be readily foreseen. No unusual or surprising technical effect is evident in the employment of such a protocol in the given context.

Having regard to the general technical knowledge which was available to persons skilled in the art in respect of distributed object protocols at the relevant date of the present claims (cf. PCT Guidelines IV-8.3), the examiner concludes that the combination of features recited in claim 1 lacks inventive step in the sense of Article 33 (3) PCT.

2.3) Claims 2-32

Dependent claims 2-32 do not appear to contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and inventive step. The features of said claims relate to matters of normal, obvious design procedure concerning the implementational details of machine translation systems and distributed systems based on client-server architecture, or to particular aspects of distributed object protocols which are generally known *per se* as acknowledged by the applicant (cf. description l.15-21). The examiner therefore remains unable to determine any inventive contribution in the subject matter of said dependent claims.

(3) Claims 33-62

3.1) Claim 33

Claim 33 recites substantially the same subject matter as claim 1 in the form of a method claim. On the basis of the arguments advanced in **2.2** above in respect of claim 1, the subject matter of claim 33 is likewise considered not to satisfy the criteria

set forth in Article 33 (3) PCT with respect to inventive step.

3.2) Claim 41

Claim 41 recites substantially the same subject matter as claim 1 in the form of a system claim with the additional specification that the system comprises a plurality of translation engines. This feature is disclosed in D1 and D2 both of which describe a modular translation system comprising a plurality of translation engines, (cf. D1: p.62 l.17-31 and Fig.3; D2: col.6 l.29-54, claim 7 and Fig.1). On the basis of the arguments advanced in **2.2** above in respect of claim 1, the subject matter of claim 41 is likewise considered not to satisfy the criteria set forth in Article 33 (3) PCT with respect to inventive step.

3.3) Claim 53

Claim 53 recites substantially the same subject matter as claim 1 in the form of a system claim with the additional specification of a plurality of clients. This feature is disclosed in D2 and D3 both of which describe a modular translation system comprising a plurality of clients interfaced to a translation engine, (cf. D2: col.4 l.49-63 and Fig. 1; D3: p.17 *Introduction* and Fig.1). On the basis of the arguments advanced in **2.2** above in respect of claim 1, the subject matter of claim 53 is likewise considered not to satisfy the criteria set forth in Article 33(3) PCT with respect to inventive step.

3.4) Dependent Claims 34-40, 42-52, 54-62

Dependent claims 34-40, 42-52, 54-62 recite similar subject matter to dependent claims 2-32 and hence give rise to corresponding objections under the terms of Article 33 PCT, the grounds for these objections being essentially the same as those detailed in respect of claims 2-32 in **2.3** above.

VII. Certain Defects in the International Application

(1) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the documents D1-D6 are not identified in the description with appropriate reference to the relevant background art disclosed therein.

(2) In accordance with Rule 6.3(b) PCT, it is considered appropriate to cast independent claims in the two-part form with those features known in combination from the prior art being placed in a preamble (Rule 6.3(b)(i) PCT) and the remaining features being included in a characterising part (Rule 6.3(b)(ii) PCT). This requirement has not been fulfilled in the case of the present independent claims.

(3) The features of the claims have not been provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

VIII. Certain Observations on the International Application

(1) Multiple independent claims in the same category

Whereas system claims 1, 41 and 53 have been drafted as separate independent claims, they appear to relate effectively to the same subject matter and to differ from each other only with regard to the definition of said subject matter and in respect of the terminology used for the features thereof. The aforementioned claims therefore lack conciseness. Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection. Hence, said claims do not meet the requirements of Article 6 PCT. In the present case, it would appear more appropriate to define the matter for which protection is sought in terms of a single independent claim in each category followed by dependent claims covering features which are merely optional (Rule 6.4 PCT).

C5

PATENT COOPERATION TREAT

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
LEC-006PC		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/US 98/ 15219	23/07/1998	
Applicant		
LOGOVISTA CORPORATION et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language,** the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   [ ] the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

   b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

   [ ] contained in the international application in written form.

   [ ] filed together with the international application in computer readable form.

   [ ] furnished subsequently to this Authority in written form.

   [ ] furnished subsequently to this Authority in computer readble form.

   [ ] the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   [ ] the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. [ ] **Certain claims were found unsearchable** (See Box I).

3. [ ] **Unity of invention is lacking** (see Box II).

4. With regard to the **title,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 1

   [ ] as suggested by the applicant.

   [X] because the applicant failed to suggest a figure.

   [ ] because this figure better characterizes the invention.

   [ ] None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 98/15219

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 G06F17/28 G06F9/46

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SCHWARZ: "'Moment, ich verbinde...'" C'T, no. 3, March 1997, pages 256-273, XP000697801 DE see the whole document	1,33,41, 53
A	EP 0 762 299 A (HITACHI, LTD.) 12 March 1997 see claim 1	1,33,41, 53

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
21 June 1999	29/06/1999

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Abram, R

1

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

...formation on patent family members

International Application No
PCT/US 98/15219

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 762299 A	12-03-1997	JP 9081569 A	28-03-1997
		CN 1151052 A	04-06-1997
		US 5751957 A	12-05-1998